

**WHAT IS CLAIMED IS:**

Sub A1  
1. A process for enabling a user to utilize a plurality of knowledge acquisition approaches to find a solution to a task, the knowledge acquisition approaches including a task-method-knowledge approach and a structure-behavior-function approach, the process comprising:

defining the task by providing information specifying at least one input parameter, one output parameter, and an initial approach;

analyzing the provided information to determine whether to process the task using the task-method-knowledge approach or the structure-behavior-function approach based on the specified initial approach;

processing the task using the determined approach to achieve a solution, the processing utilizing the input parameter; and

determining whether the solution is correct by comparing the solution with the output parameter.

2. The process of claim 1 further including, if the determined approach is the task-method-knowledge approach:

searching a plurality of existing methods for a method operable to provide at least a portion of the solution;

selecting the method if the method exists; and

defining the method if the method does not exist.

3. The process of claim 2 further including:  
searching a plurality of existing procedures for a procedure rather than searching for the method, the procedure operable to provide at least a portion of the solution;

selecting the procedure if the procedure exists; and

defining the procedure if the procedure does not exist.

4. The process of claim 2 further including defining an event, the event operable to identify when to use the method.

5. The process of claim 2 further including providing a processing order, the processing order operable to define the order in which the method will be processed relative to a plurality of other methods awaiting processing.

6. The process of claim 2 further including, if the determined approach is the structure-behavior-function approach:

searching a plurality of existing models for a model operable to provide at least a portion of the solution;

selecting the model if the model exists; and

defining the model if the model does not exist.

7. The process of claim 6 further including:

searching a plurality of existing behaviors for a behavior applicable to the model;

selecting the behavior if the behavior exists, the selection associating the behavior with the model; and

encoding the behavior into the model using the task-method-knowledge approach if the behavior does not exist.

8. The process of claim 6 wherein defining the model further includes:

searching a plurality of existing components and existing connections for a first component, a second component, and a connection between the first and second components operable to represent the model; and

if at least one of the first component, the second component, or the connection does not exist, defining the first component, the second component, or the connection which does not exist.

9. The process of claim 6 further including mapping either the input parameter or the output parameter to at least a portion of the model, the mapping operable to assign the mapped parameter to the portion.

10. The process of claim 1 further including:  
determining whether the user desires to modify at least one of the input or output parameters; and  
modifying at least one of the input or output parameters if the user so desires.

11. A computer readable medium for storing a computer executable software program for determining a solution to a task using a plurality of knowledge acquisition approaches, the program including instructions for:

defining the task;  
defining the solution;  
selecting a knowledge acquisition approach from a group consisting of a task-method-knowledge approach or a structure-behavior-function approach;  
processing the task using the selected approach;  
determining whether the task includes at least one portion to be processed using the nonselected approach;  
processing the portion using the nonselected approach; and  
determining whether the solution has been found.

12. The medium of claim 11 wherein the program further includes instructions for:

storing an output generated by processing the portion; and  
using the output as an input to the task.

13. The medium of claim 11 wherein the program further includes instructions for redefining the task if the solution is not found.
14. The medium of claim 11 wherein the program further includes instructions to provide at least one interface, the interface enabling interaction with the program.
15. The medium of claim 11 wherein the program further includes instructions for redefining the solution if the solution is not found.
16. A computer system for providing a solution to a task through information processing, the system including:
- a processor;
  - a memory accessible to the processor; and
  - software, a portion of which is stored in the memory, the software including instructions for:
    - accepting at least a first parameter to define the task;
    - accepting at least a second parameter to define the solution;
    - accepting an initial approach for processing the task;
    - determining whether to use a task-method-knowledge approach or a structure-behavior-function approach for processing the task, the determination based on the specified initial approach;
    - processing the task using the determined approach based on the first parameter; and
    - determining whether the solution is found based on the second parameter.

17. The system of claim 16 wherein the software further includes instructions for, if the determined approach is the task-method-knowledge approach:

determining whether a first portion of the task should be processed independently;

determining whether to use the task-method-knowledge approach or the structure-behavior-function approach for processing the first portion if the first portion of the task should be processed independently; and

processing the first portion using the determined approach.

18. The system of claim 17 wherein the software further includes instructions for, if the determined approach is the structure-behavior-function approach:

determining whether a second portion of the task should be processed independently using the task-method-knowledge approach; and

processing the second portion using the task-method-knowledge approach if the second portion should be processed independently.

19. The system of claim 16 wherein the software further includes instructions for modifying the first parameter if the solution is not found.

20. The system of claim 16 wherein the software further includes instructions for modifying the second parameter if the solution is not found.